

# Compliance with the private standards and capacity building of national institutions under globalization: new agendas for developing countries

Michiko Iizuka  
UNU-MERIT  
Keizer Karelplein 19 6211 TC  
Maastricht  
The Netherlands

Yari Bourbon-Galvez  
SPRU, University of Sussex  
The Freeman Centre  
Brighton BN1 9QE  
United Kingdom

**Abstract:** There is a widely held view that global private standards would eventually replace the national regulatory institutions in developing countries. The purpose of our paper is to suggest an alternative view to the above. We consider the capacity of regulatory institutions in developing country can be strengthened in the global context. We will look at the quality and sanitation standards for food and agricultural products, with cases of salmon farming industry in Chile and the fresh agricultural products in Mexico. The national regulatory institutions have been traditionally strong for food and agricultural sector. Two cases illustrate that role of national regulatory institution is still important but performs different functions in the present-day context.

**Keywords:** Standards, National regulatory institutions, Capacity building, Agro-food, Chile, Mexico

## I. INTRODUCTION

The use of global standards has increased as the developing countries are incorporated into global productive chains. In such context, regulatory institutions are required to adapt global standards for safety, quality, security, environmental, and social criteria to stay competitive through gaining efficiency while accommodating diverse market preferences. In other words, national institutions are under pressure by international forces to meet the global needs instead of acting as independent regulators, promoters and developers of standards as the globalization prevails [1], [2], [3], [4].

It is often considered that use of global private standards is disadvantageous for developing countries due to their limited political power for negotiation [5]; however, we consider this can also be a learning opportunity for the regulatory institutions in developing countries. We look at the case studies of food and agriculture products—namely fresh vegetables in Mexico and farmed salmon in Chile.

## II. LITERATURE REVIEW

### A. New functions of standards in globalizing economy

In general, standards support both conformity and diversity: they act as “external points of reference” [6] for assessing the performance, quality and physical characteristics of products or services. Standards perform four broad types of functions to

define: (1) interfaces and compatibility; (2) minimum quality; (3) achieving reduction of variety; and (4) standards of information and production description [7]. In agro-food sector, standards were conventionally established and used by the public sector to mark the minimum quality and sanitation to facilitate the exchange of commodities while ensuring the public safety.

Arguably, present-day private sector has a much bigger role in deciding the content of standards compared to that in the past [8]. In fact, standards are increasingly being set and diffused by supranational bodies such as EU, private entities (such as ISO) or International NGOs (such as Forestry Stewardship Council: FSC and Marine Stewardship Council: MSC), monitored and executed by different private entities (such as auditing firms). This seems to demonstrate the diminishing the role of national regulatory institutions in setting, monitoring and executing standards.

Reference [9], from global value chain perspective, claimed that increased use of global private standards had assigned different governance powers—legislative (rule-setting), executive (assisting/diffusion) and judicial (monitoring)—to different private entities.

For instance, in case of ISO standards, the legislative power belongs to Committee of ISOs which sets the standards, the executive power rests within consultancies or other organizations with knowledge on the standards and the judicial power rests within auditing firms which monitor the firms in certification process.

That argument is in line with [1] and [3], who viewed globalization process as spread of superterritoriality and thereby loss of national regulatory power. From that notion, there should be an allocation or transfer of the power of national governments upward to supranational bodies (i.e. WTO, GATT, EU, NAFTA etc) and downwards to more local levels of government [2]. Furthermore, the developing countries’ regulatory power will be even more threatened as [10] hints the potential of supragovernmental forces falling into the imperial claim: “activists from wealthy countries threaten to get their consumers to boycott commodities that do

not meet their standards, thus forcing producers in developing countries to conform to developed country standards”.

In fact, reference [5] claimed that compliance with private-led standards such as ISO 14000 may be disadvantageous to developing countries, due to lack of financial and political power in effectively influencing the determination of the contents of the standards.

#### B. Impact of global private standards on national regulatory bodies

The previous views can lead to believe that the regulatory function of national institutions in developing countries would eventually be replaced by the global ones as the industry is integrated globally with increase use of private standards. This is due to: (1) lack or weak capacity of national regulatory institutions [11] and/or (2) presence of strong interests by global buyers to coordinate producers at ‘arms’ length’ [12], [13], and [14].

On the other hand, several studies considered that ‘global private standards’ may create positive impacts to national and local institutions in developing countries as the standards compliance would: (1) decrease financial burden for searching for the right product/service specification [15]; (2) enhance learning through global interaction with global buyers [16]; (3) enhance knowledge and understanding of the sector [17]; (4) facilitate to share knowledge among local stakeholders in the same global chain and strengthen the local linkages[18].

Existing studies of global private standards mainly looked at the firm-level capacity building process [12], [19], [20], [13]. Some looked at the impact on capacity building at institutional levels but limited to the industrial associations [21], [13]. The capacity building process of national and local regulatory institutions, as they interact with global economy and local private firms, is not yet well documented.

The issue of standards in the agro-food sector is of great concern for the developing countries because agricultural and food products comprise greater proportion of their exports [22]. Furthermore, agricultural standards have much to contribute to the historical discussion on trade and commodity trap [23], [24] by converting commodities into the ‘produce’ to increase its value added.

### III. METHODOLOGY

This paper tries to illustrate the capacity building process of the national regulatory institutions as they interact with global market and private firms, looking at the Latin American cases of the Chilean farmed salmon and Mexican fresh vegetables. The Chilean case looks at chronological development of different incidents of compliance with standards to illustrate the changes in the way the public and private institutions interact while Mexican case looks at how both public and private sector confront the challenges on standards differently in comparative manner. Here, we attempt to identify “who” is playing “what” role with regards to standards compliance, adopting reference [9]’s distinctions on governance powers: legislative (rule-setting), executive (rule supporting /diffusion) and judicial (rule- enforcing/monitoring).

Both case studies are constructed with secondary and qualitative data collected during the fieldwork. The case of salmon is based on 46 open-ended semi structured interviews and 62 semi-structured firm-level surveys conducted during March-May, 2004 in Chile. The Mexican cases used open-ended semi-structured interviews and questionnaires applied to 18 firms and two industry associations during November 2007 - April 2008. For both cases, additional information was supplemented with the secondary documents.

### IV. CHILEAN SALMON FARMING INDUSTRY

#### A. Industry background

Chilean contribution to the world supply of salmon has increased tremendously in the past 10 years (Figure 1). In 2006, this industry exported approximately 628,000 tons (round and estimate) and earned 2 billion USD, making it a top exporter of farmed salmon in the world after Norway [25].

The industry now includes diverse participants from the private, and public sectors at global, national and local level. Inclusion of a diverse array of actors and enlarged scale and scope of productive process multiplied the complexity in national regulatory system. This is particularly true in the 2000s as firms increasingly needed to meet both local and global sanitary and environmental requirements. Here, two cases from different time periods are examined to demonstrate how the local regulatory system became complexity and evolved over the time.

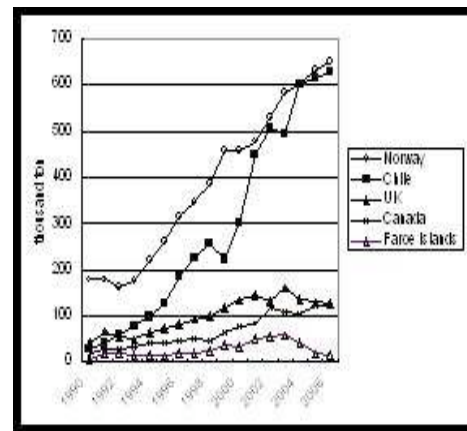


Fig.1. Main exports of farmed salmon and trout, 1990-2007

Source:SalmonChile2007

### *B. Regulatory framework of salmon farming industry in Chile*

There are several institutions involved in regulating the salmon farming industry. The way in which these institutions interact increasingly became complex due to the expansion and extension of the industrial structure. The main sectoral regulating body for the salmon industry is the Undersecretary of Fishery (Subsecretaría de Pesca) and the National Fishery Service (SERNAPESCA). These institutions have belonged to the Ministry of Economy since 1976. As regards to the salmon farming industry, the Undersecretary of Fishery set rules for export purposes through adapting international regulations for local and sectoral contexts, obtaining information on sanitary regulations from the government of market destinations and acting as national guarantor on the products elaborated by the firms that are certified with their standards. The SERNAPESCA monitors firms, certifies the laboratories that examine the firms, enforce certification and grant certification to the firm in case of compliance. In the process of monitoring, it also promotes their standards through training and technical advice. The Undersecretary of Fishery also participates in the negotiation of regulatory matters both at bilateral and multilateral trade agreements (such as FTA and APEC).

There are several institutions that operate under national regulations related to the industry. Although these institutions do not directly interact nor address global private standards, the trajectory of national regulations is increasingly aligned to what is happening in the global context, due to the fact that a major proportion of the salmon is exported to developed markets. For instance, the Agriculture and Livestock Service (SAG: Servicio Agrícola Ganadero), which belongs to the Ministry of Agriculture, regulates the chemicals used in fish rearing (such as vaccines) and fishfeed. These are essentially national regulations; however, because of traceability requirement, the global requirements are increasingly being reflected at the national level.

Above condition create the complex layers of regulation at the local level. For instance, a salmon processing plant is regulated by the municipal regulatory institution, Superintendent of Health and Sanitation Service (SISS), for sewage and effluence inland and the Maritime Authority (Chilean Navy) for sewage and effluence into the sea. Furthermore, SERNAPESCA deals with fish related diseases, yet the use of chemicals for fish and fishfeed is controlled by the Agriculture and Livestock Service that belongs to Ministry of Agriculture. There is increasing complexity in regulations and institutions as numerous small scale suppliers are involved at the local level while the traceability requirement at the global level also demands compliance with environmental and sanitary regulations at local level.

#### *1) The case of sanitation and quality standards for salmon industry in the late 1980s.*

The first attempt to create standards in the Chilean salmon industry took place in the late 1980s when they were competing against more well known producers of Canada, Norway and Scotland. Due to the intense competition, it

became important to differentiate good Chilean products from inferior one through introducing 'quality seal' (sello de calidad) [26]. This 'seal' was created by Association for Producers for Salmon and Trout in Chile (APSTC later it became Association of Salmon Industry: SalmonChile), with technical cooperation from Fundación Chile, a privately run institution. Parallel to this private initiative, the Undersecretary of Fishery also developed the Sanitary operation procedure standards (Procedimiento Operación de Saneamiento: POS) for salmon industry, based on the international standard, 'Sanitary Standards Operation Procedure (SSOP)'. SSOP is a standard that comprises part of the Hazard Analysis and Critical Control Point (HACCP). The Undersecretary of Fishery later created a standard called PAC (Program for Assurance of Quality), which is based on HACCP and made compliance obligatory for those firms who wished to export. The PAC eventually replaced 'quality seal'.

#### *2) The case of environmental standards in the 2000s.*

In the 1990s and the 2000, the presence of Chilean salmon industry became prominent both at local and global levels. Increase in production corresponded with increase in environmental impact in various form such as solid and industrial waste, discharged water, oil spillage, alteration of natural habitats for sea mammals, biodiversity and scenic beauty. These issues fall into the jurisdiction of different public authorities at local and national levels. However, no specific regulation emerged to control the salmon industry per se. Under such circumstances, many regulatory institutional innovations occurred with increased participation of the private sector.

For instance, Environmental Regulations for Aquaculture (DS No.320: RAMA) and Sanitation Regulation (RESA) was established by the Undersecretary of Fishery, in the early 2000s. Much of these were based on existing regulations in Norway and Scotland but the effectiveness of this regulation in local settings was investigated by the research institution owned by the Chilean association of salmon industry [27]. In addition to above, there is public-private collaboration in monitoring the compliance of national environmental regulations. The Clean Production agreement was made between National Council for Cleaner Production, group of local and national regulatory institutions and the Chilean salmon farming industry, headed by the association in 2001. The public regulators and the association agree to work together to monitor compliance with environmental standards by the firms. In addition to above, local standards were established. The Association of Chilean Salmon Industry (SalmonChile) created umbrella standards called SIGes (Sistema Integrado de Gestión) based on various standards specific to this sector such as HACCPs, RESA and REMA as well as ISO 9000 and ISO 14000. This local standard facilitated the better access to information and training for firms. These standards also acted as a communication tool with other global players. For instance, in 2004, Wall-Mart accepted the SIGes as the procurement standards from Chile (SalmonChile 2007) and in 2003, the Association of salmon

producers of Americas (SOTA) incorporated SIGs into their standards, SQF-SOTA [25].

In summary, the regulatory system and national institutions for the salmon industry co-evolved over the years. At the early stage of industry, there were not many regulations and the only regulations applied were standards that required for exports. For this purpose, initiatives were first taken by the private sector in setting up common quality standards to ensure quality for differentiation. This attempt by the private sector was soon taken up by the national authorities to create the national standards through unifying the existing several standards in developed countries and international organizations, diffusing information, enforcing and monitoring the compliance for the exporting firms. The involvement of public sector in standards legitimized private sectors' products to penetrate into the global market in early stage. As industry grew and increased its complexity with local specification with scale and scope of production, institutional innovation started to emerge at national level so that the global standards can be accommodated better in the local context. In these local initiatives, national institutions are much more important in certifying and guaranteeing the product than actually enforcing and sanctioning. In sum, the regulatory framework for the Chilean salmon farming industry has transformed as the industry grew and became more globally integrated.

## V. MEXICAN EXPORT-ORIENTED FRESH PRODUCE INDUSTRY

### A. The industry and market at a glance

The trade relationship between United States and Mexico is part of a long term North American integration. The North American Free Trade Agreement (NAFTA) was the opportunity to deepen their relations, increasing the intraregional trade share from 25% in 1989, to 40% in 1994, and 56% in 2003 [28]. In this context, the production and exports of fresh produce in Mexico had grown in value, led mainly by Sinaloa as the most important horticultural region in Latin America [29], and Sonora [30].

Thousand tons, 1998-2007

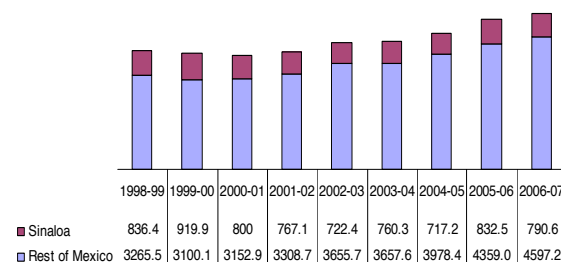


Fig.2 Mexico and Sinaloa fresh produce exports to United States

### B. Engagement with and diffusion of international standards for food safety

In Mexico there are various regulatory institutions regulating and enforcing international food standards. There is the multilateral NAFTA commission related to Sanitary and Phytosanitary (SPS), based upon the Codex, the International Office of Epizootics, the International Plant Protection

Convention, and the North American Plant Protection Organization standards. There is also a decentralized multi-governmental agency (Mexico Calidad Suprema: MCS), the official regulatory agency “Servicio Nacional de Sanidad Inocuidad y Calidad Agroalimentaria” (SENASICA), adhered to the International Plant Protection Convention (IPPC) of the Food and Agriculture Organization of the United Nations (FAO); and the independent international third party certifications bodies such as Scientific Certification Systems (SCS), Primuslabs, and Quality and Management Innovation & Supreme Audit Institutions Global (QMI SAI Global).

In Mexico, there is interdependency between governmental, private, R&D centers, NGOs, consultation bodies, and industry associations for legislation (legitimizing), execution (promotion and assisting), and enforcing (monitoring) “voluntary” regulations/standards. Diffusion of standards goes through complex processes including: presence of international certifying bodies, accreditation of national organizations, state and industry awareness, demand for certifications services, coordinating with national and local (public and private) research and development centers in agricultural, and food and post-harvest science and technologist to supply faster services at lower costs. All these phases may happen in different orders, as will be shown following cases.

### C. National institutional capacity building

#### 1) The case of Melones Internacionales (Melones)

In Mexico, there have been difficulties diffusing the standards due to lack of: (1) awareness; (2) resources for implementation; (3) regulatory stringency and; (4) certainty of benefits from early certification. However, the collaboration of among private firm with leadership of Melones, one of the largest fresh produce grower/shippers in Mexico, created an important impact on the diffusion of standards.

In 2001, as soon as Melones' CEO discovered the importance of food safety standards while visiting a certified firm, Agros which as owned by the president of AMPHI (Mexican greenhouse growers association, now called AMHPAC: Asociacion Mexicana de Horticultura Protegida), started implementation and certification of food safety standards with SCS. This attempt was followed by the growers from Sinaloa, in 2002-3, with support from their association, the ‘Confederation of Agricultural Associations of the State of Sinaloa’ (CAADES: Confederacion de Asociaciones Agricolas del Estado de Sinaloa) [31].

As can be seen, at least five private organizations (Agros, AMPHI, Melones, SCS and CAADES) played important roles in building up regulatory system at national level. Agros in 1999 become a leading firm in implementing food safety standards and was benchmarked for its best practices. AMPHI promoted use of bioregulators in greenhouse and organic production systems; organized conferences for members with state of the art information on food safety provided by Mexican and US governmental agencies as well as scientists and academia specialized in the agribusiness industry. Melones' social ties and spillover effects promoted and sustained a high demand for certifications in Sinaloa. SCS and

later PrimusLabs provided training and certifications. CAADES supported their farmers in the implementation process, contracting and delivering training, hiring consultants, and negotiating better deals for their members (more than 10,000) in the purchase and adaptation of food safety infrastructure and technologies for their Good Agricultural and Manufacturing Practices (GAP and GMP) [31].

Buyers increasingly required certifications to close deals with Mexican suppliers. The local/national public-private collaborations of the aforementioned organizations triggered a legitimating process, driven by the notion of having a common front against the risk of foreign markets using non-tariff barriers against Mexican growers, and having tools to negotiate international disputes [32].

#### 2) *The case of Mexico Calidad Suprema (MCS)*

In 2002, Mexico Calidad Suprema (MCS), a public institution, was put in place with the aim of creating and promoting quality standards across the food industry in Mexico. MCS co-evolved with the demand for higher quality assurance by internal markets, and with demand of food safety and good agricultural practices by the US, European, Canadian and Japanese buyers. MCS consolidated various stringent international private standards into one certification system, reducing the regulatory complexity associated with the new regulatory regime, where there are a growing number of international standards.

The initial phases of diffusion required resources to make the industry aware, for promoting standards, implementation, and certification. MCS is non for profit and tries to reach the agriculture and food industry in Mexico and abroad, allocating resources for promotion, training and consulting services at low costs for entire international supply chains; 50% is paid by the firm (inside or outside Mexico) and 50% is covered by the Mexican Government.

However, because financial, technological and knowledge resources were scarce, MCS engaged in public-private institutional collaboration with associations, research centers, consultation bodies, provincial and local governments, federal agencies, financing institutions, network of growers and producers, other private international certifying bodies, so on.

The international legitimacy grew with agreements with Wal-Mart's procurement department, GlobalGap, the Japan Ministry of Agriculture, and in progresses with SQF. Nevertheless, enforcement and sanctions under a voluntary scheme was left to the markets.

In summary, the Mexican fresh produce industry and public institutions acknowledge the need to be certified to minimize the risk of accusations of contamination of fresh produce, also to gain competitive advantage with early and stringent implementation of international private standards. Industry associations, national institutions and national research centers collaborate in acquiring and exploiting knowledge by means of trial and error process through development, training, managing and codifying complexity. This is facilitated by benchmarking practices and observation of other facilities, and human resources mobility. And public-private collaboration

was necessary to achieve legitimacy of the adapted standards for the sectoral and local conditions.

## VI. CONCLUSION

The growing use of global private standards feared to take away governance power from national regulatory institutions, particularly from the developing countries with weaker regulational institutions. The cases of standards in Mexican vegetable and Chilean salmon farming industry demonstrate the changing nature of role of national regulatory institutions.

In the legislative function, the national institutions and private sectors are increasingly taking the role of 'adaptors' of global private standards, since no plain transfer of standards to national/local level but it increasingly required adaptation process to simplify to fit complex realities in the local and sectoral context. In the executive function, it became evident that private-public collaboration taking the important part in transforming the role from 'promotion of standards' to 'assistance' to implementation diffusion of standards and regulation. In the judicial function, the market forces taking over the role of "sanctioning" from national institutions; on the other hand, national institutions increased function of 'legitimizing' through certifying and guaranteeing the good agricultural and manufacturing practices in the global market and before international trade disputes commissions.

The cases demonstrate the co-evolution of regulatory system in Mexico and Chile for agro-food sector as the sectors become globally integrated. The role of national regulatory institutions in this co-evolutionary process resembles that of Gerschenkron [33] which stated that government play role to fill the missing gaps created by the market forces as the developing countries go through transformation. As the cases demonstrated, he also believed the ways in which government fill the gaps are not the same due to the differences in preconditions: each situation requires plotting the distinctive path. However, this does not mean that things needs to be entirely new—the countries can follow the existing path of the predecessor, namely the global standards. In other words, the government may introduce "innovative features", such as collaborating with the private sector to cope with the new environment which makes the what it appears to be the "top-down" governance of global standards more a "bottom up" process of institutional innovation for complying with global standards involves series of economic actions and reactions as well as learning and institutional development. The future challenges for the national institutions in developing countries would be to involve further in defining standards at international level, at the same time that they maintain the role of impartial guarantor while sustaining close collaboration with the private sector.

TABLE 1: SUMMAR OF CASES

Actors	Functions					
	Legislative (Transferring)		Executive (Transforming)		Judicial (Monitoring)	
	Setting	Adopting (Adapting)	Promoting, Encouraging, Communication, Information	Allocating resources	Enforcing, Sanctioning	Legitimizing
<b>In the 1980s: Sello de Calidad</b>						
Industry Association (Association of Salmon Producers in Chile)	✓	✓				
Semi private institution (Fundacion Chile)	✓	✓				
PAC/OPS						
Undersecretary of Fishery	✓	✓				✓
National Fishery Service	✓	✓		✓		✓
<b>In the 2000s: SIGEs</b>						
Industry Association (SalmonChile)	✓	✓		✓		
Private Sector (Wal-Mart)						✓
Association of Canadian, Canadian and Chilean salmon producers (SOTA)						✓
<b>Private sector: Case of Melones Internacionales</b>						
Private (Melones)	✓	✓				
Industry Association (AMPHI, CAADES)		✓		✓		
Private (Agros)		✓				
International certification body (SCS)	✓	✓		✓		✓
<b>Public sector: Case of Mexico Calidad Suprema (MCS)</b>						
MCS	✓	✓		✓		✓
Government (Minister of Economics, Minister of Agriculture, and Mexican International Trade Bank)	✓			✓		✓
Foreign Government (Minister of Agriculture)						✓
Private (NORMEX, PrimusLabs.com, Wal-Mart)	✓	✓				✓
Industry Associations (CAADES, AMPHI, FPAA)			✓	✓		✓
Public-Private consultation body (ANCE, COSAFI)	✓			✓		

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